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July 3, 2013

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: WT Docket 12-69
Promoting Interoperability in the 700 MHz Commercial Spectrum

Dear Ms. Dortch:

On behalf of King Street Wireless, L.P. ("King Street") and Continuum 700 LLC ("Continuum"), we write to supplement the record in this proceeding by emphasizing both the need for interoperability and the absence of a meaningful reason not to restore an interoperability requirement.

In two recent submissions in the proceeding, the need for an interoperability requirement, and the absence of any reason not to adopt one, are highlighted. Specifically, on May 28, 2013 King Street demonstrated that lack of interoperability has been the cause for the iPhone not being available over Band 12. A copy of that filing is enclosed. This means that without interoperability, the iPhone will not be available to King Street subscribers in any of its 152 markets covering more than 40 million people. Even more recently, on June 25, 2013 Dish demonstrated that the purported threat from high power E Block transmissions (which opponents of interoperability have touted as a basis for opposing interoperability) is entirely unfounded. A copy of that submission is also enclosed.

Proponents of interoperability have advanced sound factual and theoretical arguments as to why it is needed. For example, on January 14, 2013, Cellular South, Inc. advised the Commission that, but for the lack of interoperability, 4G service could be deployed to "millions of Americans who currently do not have access to such services today," and that within twelve months of the time that interoperability becomes effective, it would provide service to "at least seventy percent (70%) of the population as well as fifty percent (50%) of the geography, of its existing service area which would result in coverage for over 2.5 million POPS." A copy of the Cell South presentation is enclosed.

Both King Street and Cell South have also demonstrated that the lack of interoperability absolutely prevents roaming over A Block spectrum. See King Street's presentation to that effect of September 18, 2012 (copy enclosed) and Cell South's presentation of June 1, 2012, at page 18 (copy enclosed).

Collectively, the King Street and Cell South submissions demonstrate that lack of interoperability is preventing a huge number of citizens from having access to 4G LTE service over A Block spectrum, stopping 700 MHz A Block licensees from having access to the iPhone, and causing A Block subscribers to be denied roaming access.

Information Age Economics ("IAE") has advised the Commission of what will likely happen if interoperability is not restored, explaining that it will inure to the "detriment of the interests of customers, the effectiveness of market competition, and the stimulation of innovation by new companies." (See the enclosed June 3, 2013 letter report of IAE, at page 1.)

The problems presented by a lack of interoperability are far more than theoretical. In the case of King Street, there is no ability for users of King Street's spectrum in any of its 152 markets to receive roaming service when outside of King Street's footprint. This, of course, detracts greatly from the value of King Street's service to anyone in any King Street market. Those markets cover more than 40 million persons. All of these same factors apply to Continuum as well. Continuum is licensed only on the 700 MHz A Block, and primarily in smaller markets. For purposes of illustration, two of Continuum's licensed markets are Charleston, South Carolina (BEA026) and Savannah, Georgia – South Carolina (BEA028). Attached are maps depicting those market areas. What stands out is the host of small cities and towns in these markets. They include Grover, Moncks Corner, Ridgeville, Ruffin, Summerville, Walterboro (all in BEA026), Grays, Hampton, Estill, Ridgeland, Beaufort, and Hilton Head Island (all in BEA028). Without interoperability, these small cities will not receive 4G service over A Block spectrum, and perhaps not over any spectrum, in the near future.

This stands in stark contrast to the wireless efforts of Continuum's management team in prior wireless endeavors – where interoperability was in effect. Specifically, by those efforts, the Continuum management team collectively built out 15 markets in the Southeast United States. In doing so, service was made available in markets covering 12 million persons. Many of those operations were in small markets (e.g., Selma, AL; Corbin, KY; Tupelo – Corinth, MS; and La Grange, GA) where there were few or no wireless alternatives. And, significantly, those efforts resulted in the current direct employment of more than 1,200 persons. Given that Continuum's current licensed areas cover more than 14 million persons, significant additional service and employment would be available when interoperability is restored.

For all of the foregoing reasons, King Street and Continuum urge the Commission to restore interoperability obligations promptly.

Respectfully submitted,

CONTINUUM 700, LLC

By: /s/ Thomas Gutierrez
Thomas Gutierrez, its counsel

KING STREET WIRELESS, L.P.

By: /s/ Thomas Gutierrez
Thomas Gutierrez, its counsel

Enclosures

cc: L. Peraertz

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May 28, 2013

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: WT Docket 12-69

Dear Ms. Dortch:

As the Commission's records in this proceeding properly reflect, King Street Wireless, L.P. ("KSW") has been an ardent supporter of interoperability since the inception of this proceeding. Among other things, KSW has:

- commenced the proceeding (as one of a core group of four licensees) by filing a Petition for Rulemaking in what is now the referenced proceeding.
- retained several consulting engineering firms to assess the need and appropriateness of interoperability, and to conduct on-point empirical testing on the issue.
- participated in the referenced rulemaking by filing formal reply comments as well as ex parte submissions.
- conducted a number of meetings at multiple levels with commission personnel to advocate for interoperability.
- negotiated with the major carrier opponent of interoperability, in an (unsuccessful) effort to obtain a voluntary industry solution.
- participated actively with a coalition of licensees that, while urging interoperability, responded to a number of staff inquiries, thereby removing impediments to a pro-interoperability ruling.

Notwithstanding all of the above, and the efforts of the vast majority of the 700 MHz licensee community, no decision has been forthcoming in the more-than-3 ½ years since the proceeding was initiated. One reason for such in action may be that the principal opponent of

interoperability has argued extensively that there is a lack of any need for interoperability, as evidenced by the fact that KSW (in conjunction with its partner United States Cellular Corporation ("USCC")) is already providing 4G LTE service over a substantial portion of the KSW 700 MHz spectrum.

KSW has already demonstrated that its build out and operational activities demonstrate the need for interoperability, rather than suggest that there is no need. In support, KSW has shown that, given the lack of interoperability, it efforts to provide service using its 700 MHz spectrum have been severely restricted. Specifically, KSW has explained that it cannot get access to some of the most cutting edge consumer equipment and cannot offer nationwide roaming. Each of these presents an independent basis justifying a reason to support an interoperability mandate.

Now, yet additional facts exist that vividly demonstrate why interoperability is needed: both KSW and USCC want to offer the iPhone; Apple will not offer any Band 12 products, so KSW cannot offer the iPhone over its 700 MHz spectrum; and the only way that USCC can access the iPhone is over 850 MHz spectrum, for which it is independently licensed. When all of these factors are put together, it is absolutely clear that due to a lack of interoperability, KSW has no opportunity to provide service to customers who want the iPhone. The only positive aspect of this situation is that it clearly demonstrates the need for interoperability relief.

For the reasons set forth above, KSW renews its request for a ruling that interoperability is needed now.

Sincerely,

KING STREET WIRELESS, L.P.

by: /s/ Thomas Gutierrez
Thomas Gutierrez, its counsel

Mariam Sorond
Vice President, Technology Development
Mariam.Sorond@dish.com
(202) 293-1183

June 25, 2013

EX PARTE PRESENTATION

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Ex Parte Presentation in WT Docket No. 12-69, *Promoting Interoperability in the 700 MHz Commercial Spectrum*

Dear Ms. Dortch:

Pursuant to Section 1.1206 of the Commission's rules, 47 C.F.R. § 1.1206, DISH Network Corporation ("DISH") submits this letter summarizing a telephone call on Friday, June 21, 2013 between Tom Peters, Chief Engineer, Wireless Telecommunications Bureau and Mariam Sorond, Vice President, Technology Development for DISH.

During the meeting, DISH explained that Lower 700 MHz E Block authorized power levels (50 kW ERP) do not impact the feasibility of device interoperability at issue in the above-referenced proceeding.[1] DISH discussed its previously-filed technical report, which demonstrates that a PFD-limited high power broadcast transmission in the Lower E Block has the same impact on adjacent block operations as a lower power alternative.[2] In addition, any parties requesting modification of the Lower E Block technical rules have provided no evidence that the existing rules are insufficient to protect adjacent operations. There is thus no technical justification to change authorized power levels in the Lower E Block in this proceeding, because these levels have no impact on the Commission's goal of promoting interoperability in the Lower 700 MHz band.

Given the lack of record support, there is also no legal basis to change the power levels authorized for the 700 MHz E Block.[3] DISH acquired the E Block spectrum at auction in 2008

[1] *See* Letter from Jeffrey H. Blum, DISH Network Corporation, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 12-69 (March 21, 2013) ("March 21 DISH Letter"); Letter from Jeffrey H. Blum, DISH Network Corporation, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 12-69 (May 29, 2013) ("May 29 DISH Letter").

[2] *See* May 29 DISH Letter at Attachment.

[3] *See* March 21 DISH Letter. *See also* May 29 DISH Letter; DISH Network Corporation Comments, WT Docket No. 12-69, at 8-9 (June 1, 2012).

for nearly $712 million based on the technical rules in place at the time of the auction.[4] DISH has spent years studying and testing a broadcast video service in the E Block and has already filed notifications to commence operations at 10 sites throughout the country, with active work ongoing to identify and commence operations at additional sites.[5] Any changes to the service rules for the E Block post-auction will upset DISH's legitimate, investment-backed expectations for use of this spectrum, jeopardize DISH's investment and business plans, and may be considered an unauthorized partial revocation of DISH's license.[6]

Respectfully submitted,
/s/ Mariam Sorond
Mariam Sorond

cc: Tom Peters

[4] DISH holds 168 licenses in the Lower 700 MHz E Block (722-728 MHz) through its subsidiary, Manifest Wireless L.L.C. Together, DISH's E Block licenses form a nationwide footprint, except for five of the largest U.S. metropolitan areas (New York, Boston, Philadelphia, Los Angeles, and San Francisco).

[5] *See* March 21 DISH Letter.

[6] *See* DISH Network Corporation Comments, WT Docket No. 12-69, at 8-9 (June 1, 2012).

C Spire Wireless
1018 Highland Colony Parkway, Ste 300
Ridgeland, MS 39157

January 14, 2013

Ex Parte

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: ***WT Docket No. 12-69***

Dear Ms. Dortch:

Cellular South, Inc. (d/b/a C Spire Wireless) submits this *ex parte* letter in order to further underscore the need to restore interoperability via a single, unified band specification for all operations on paired spectrum in the Lower 700 MHz by a date certain within the next twelve to eighteen months. Commission action on this issue would end underutilization of this valuable spectrum and facilitate the expansion of mobile broadband deployment throughout the country.

This proceeding is rooted in a petition[1] filed over three years ago seeking resolution to a problem that arose over 4 years ago – just after the close of Auction 73 – when a second, narrower band specification was created for the Lower 700 MHz paired spectrum, thus destroying interoperability for that band. As was noted when the Commission unanimously issued the present NPRM, competitive and market realities demand a resolution that is now overdue.[2]

Without Commission action to restore Lower 700 MHz interoperability, over $2 billion of the best spectrum ever made available for mobile broadband deployment in the U.S. will remain largely fallow — further stifling economic growth in places (like America's vast non-urban areas) that are most in need during these difficult times.

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[1] *See,* Petition of 700 MHz Block A Good Faith Purchasers Alliance (filed Sept. 29, 2009).

[2] See, e.g., *Re: Promoting Interoperability in the 700 MHz Commercial Spectrum,* WT Docket No. 12-69; *Interoperability of Mobile User Equipment Across Paired Commercial Spectrum Blocks in the 700 MHz* Band, RM-11592, Statement of Commissioner Mignon L. Clyburn (Mar. 22, 2012) ("If sufficient progress is not being made, we should not hesitate to adopt these proposed rules. I look forward to an industry solution, or the adoption of rules, by the end of this [2012] calendar year.")

No Technological Impediments to Restoring Lower 700MHz Interoperability

The record in this proceeding is crystal clear: There are no technological or interference impediments to restoring interoperability to the Lower 700 MHz paired spectrum. There is simply no genuine deployment scenario in which the use of a single, harmonized band specification diminishes the performance of devices on the Lower 700 MHz paired spectrum.[3]

Substantial Benefits to Harmonizing Lower 700MHz

By harmonizing all operations on the paired spectrum in the Lower 700 MHz to their original single, unified band specification, the Commission would enable competitive operators to immediately begin the process of deploying 4G mobile broadband services to millions of Americans who currently do not have access to such services today.

For example, upon the Commission establishing a date certain for the full restoration of a single, unified band specification for all operations in the Lower 700 MHz paired spectrum (the "Lower 700MHz Harmonization Date"), C Spire Wireless would immediately begin network design, site acquisition, and engaging equipment and device vendors to support the deployment of 4G LTE services in its Lower 700 MHz license area. Then, no later than twelve (12) months prior to the Lower 700MHz Harmonization Date, C Spire Wireless would begin construction, testing and optimization of a Lower 700 MHz LTE network so that, on or before the Lower 700 MHz Harmonization Date, C Spire Wireless would offer LTE services to at least seventy-percent (70%) of the population, as well as fifty percent (50%) of the geography, of its existing service area which would result in coverage for over 2.5 million POPs.[4]

In short, the sooner that C Spire Wireless has certainty that a single band specification will be restored to the Lower 700 MHz paired spectrum, the more quickly it will be able to deploy LTE on its 700 MHz spectrum; making 700 MHz spectrum its primary spectrum for LTE deployment and further enabling the re-farming of its other spectrum holdings for supplemental 4G deployments. Other, similarly-situated operators would follow suit, substantially increasing the availability of 4G mobile broadband services and competition to American consumers – especially in our nation's small towns and rural areas.[5]

---

[3] *See, e.g.,* October 10, 2012, *ex parte* letter of Vulcan Wireless LLC, re: WT Docket No. 12-69 (summarizing the conclusions of engineering analyses submitted in this proceeding).

[4] POPs estimate is based upon U.S. Census 2011 estimate data. *See, e.g.,* quickfacts.census.gov.

[5] *See,* February 9, 2011, *ex parte* letter of Cellular South, Inc., re: WT Docket 05-265 and RM-11592, p. 3 (emphasis added):

> *A data roaming obligation similar to the current voice roaming obligation* ***(and the assurance of interoperable 700 MHz devices within the very short term)*** *would provide Cellular South with certainty on the fundamental issue preventing rapid deployment of substantial capital for the construction of new 4G facilities within its current operating areas and its larger 700 MHz license footprint....*
>
> *The capital needed for an extensive deployment of LTE across the company's 700 MHz license area was secured prior to Auction 73. This capital, which could be creating jobs through the construction and operation of new cell sites, towers, and retail locations, has remained sidelined as a result of the lingering uncertainty surrounding data roaming* ***and interoperability. Should the FCC end this uncertainty, the Commission can be assured that announcements of job-creating network upgrades and expansions would follow.***

With the assurance of a Lower 700 MHz Harmonization Date on or before July 1, 2014, C Spire Wireless and other similarly situated operators would finally be able to move substantial private capital from the side-lines into Lower 700 MHz deployments. With that one action, each of these carriers would, for the first time since Auction 73, have certainty that a unified Lower 700 MHz paired-spectrum ecosystem would develop in the same robust manner as we have experienced in prior spectrum bands.

Unified band specifications across like spectrum have been essential to promoting previous wireless deployments, enabling all operators – regardless of future or existing air-interface technologies – to participate in continued, robust development on the 850 MHz spectrum (i.e. AMPS, TDMA, CDMA, GSM, and, soon, LTE) and PCS spectrum (i.e., CDMA, GSM, and now LTE). Restoring this condition – a unified band specification – to the Lower 700 MHz paired spectrum is absolutely critical to ending the underutilization of this valuable spectrum and to accelerating mobile broadband deployments throughout the country.

For all these reasons, C Spire Wireless again urges the Commission to move quickly to establish a date, not later than July 1, 2014, by which all operations on the Lower 700 MHz paired spectrum will be restored to a single, unified band specification.

Sincerely,

Benjamin M. Moncrief
Director, Government Relations
C Spire Wireless

cc: Ruth Milkman, Chief, Wireless Telecommunications Bureau (via e-mail)
Jim Schlichting, Senior Deputy Chief, Wireless Telecommunications Bureau (via e-mail)

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September 18, 2012

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: WT Docket No. 12-69

Dear Madam Secretary:

Pursuant to Section 1.1206 of the Commission's rules, 47 C.F.R., this correspondence constitutes notice of a permissible ex parte presentation in the captioned proceeding.

The meeting transpired on September 17, 2012. Allison C. DiNardo of King Street Wireless, L.P. and the undersigned, representing King Street Wireless, met with Renee Wentzel of the Chairman's office.

At the meeting, the arguments included on the enclosure hereto were presented.

Please direct any questions to the undersigned counsel for King Street Wireless, L.P.

Very truly yours,

/s/ Thomas Gutierrez
Counsel for King Street Wireless, L.P.

Enclosure

cc: Renee Wentzel

September 17, 2012

MEETING WITH THE OFFICE OF THE CHAIRMAN AND KING STREET WIRELESS, L.P. REGARDING INTEROPERABILITY

I. Nothing Less Than the Existence of Competition in Wireless Broadband is at Stake Here!

A. 700 MHz is one of two wireless bands geared primarily towards wireless broadband.

B. In Auction 73, AT&T and Verizon bought the great majority of all spectrum, whether measured on a cost basis or a MHz/pop basis.

C. Add to that, AT&T bought 12 MHz of 700 MHz in all major markets prior to the auction. And AT&T may well buy additional 700 MHz spectrum in the Verizon secondary market auction. Thus, AT&T's dominance in 700 MHz is not in dispute.

D. The other wireless band where broadband is the focus is AWS. There Verizon just purchased a sizable interest that makes Verizon effectively dominant in that band. Broadband capacity of Sprint and T-Mobile is nominal, at best.

E. Thus, if the Commission genuinely wants competition in wireless broadband, it needs to permit smaller carriers to compete, and interoperability is a pre-requisite to that.

II. Interoperability Must Include Both Roaming Relief and Equipment Relief.

A. Interoperability means operating in Band Class 12.

B. King Street has invested hundreds of millions of dollars in Band Class 12 facilities already. By getting to market early, it has done just what the Commission has urged. Its investment should not be orphaned by lack of interoperability.

C. Proposals to re-involve 3 GPP in the interoperability process overlook timing problems; the fact that such an effort is not the type of issue 3 GPP handles; and the fact that 3 GPP is dominated by large carriers whose economic interest is not in interoperability.

D. Without interoperability, competition and small carrier involvement will go the way of the CLECs. That is a legacy no administration should want.

III. Interoperability is Necessary for Small Carriers to Compete.

A. Without interoperability, there will be no roaming. Roaming is key for consumer satisfaction and competitive offering for the many reasons the Commission has repeatedly noted.

B. The Commission's data roaming order is one of this administration's legacy accomplishments. Without 700 MHz interoperability, the data roaming rules need an asterisk stating "Does not apply to 700 MHz."

C. Roaming is needed, not only to create a competitive offering, but to facilitate incoming revenue.

D. Vibrant roaming is also key to service to rural areas and to public safety. History teaches us that it is the smaller carriers that focus more on rural areas and operate there first.

IV. A Second Critical Feature of Interoperability is Equipment.

A. Forty percent of all customers make their carrier decision based upon equipment.

B. Without interoperability, small carriers face more expensive equipment, fewer options, and longer waits. Vendors, as well as small carriers, have acknowledged this.

C. The equipment situation was bad enough before the recent verdict in the Apple/Samsung proceeding. Indeed, USCC reported that only one of nine manufacturers contacted would sell Band Class 12 equipment. Now that its vendor has received a devastating verdict in the San Francisco Apple/Samsung case, with more proceedings to come, the need for reasonable access to cutting edge equipment is even greater.

D. Last week's news and developments with the iphone 5 demonstrates the key role that equipment plays.

E. The requested Band Class 12 specification requirement that is needed here is no different from a multitude of equipment design requirements imposed by the Commission.

V. There Are No Technical Reasons Not to Require Interoperability.

A. In response to the FCC's request, only two genuine engineering studies were presented.

B. Both show there to be no technical impediments to interoperability.

VI. Necessary Relief.

A. Require Band Class 12.

B. Act in calendar year 2012.

C. Full implementation in calendar year 2013.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
	)	
Promoting Interoperability in the 700 MHz Commercial Spectrum	)	WT Docket No. 12-69
	)	
	)	
Interoperability of Mobile User Equipment Across Paired Commercial Spectrum Blocks in the 700 MHz Band	)	
	)	
	)	

COMMENTS OF CELLULAR SOUTH, INC.

Cellular South, Inc. ("Cellular South") submits these comments in response to the Commission's Notice of Proposed Rulemaking in the above-referenced docket to promote interoperability in the 700 MHz commercial spectrum and to promote the interoperability of mobile user equipment in the 700 MHz band.[1]

INTRODUCTION AND SUMMARY

Cellular South and its affiliates have been providing wireless services to their customers in all of Mississippi and parts of Tennessee, Alabama, and Florida for approximately 25 years. In preparation for the deployment of a 4G LTE network, Cellular South participated in Auction 73 in 2008 and spent approximately $192 million to acquire Lower 700 MHz licenses. The lower 700 MHz licenses were grouped together as LTE Band 12 at the time of the auction. Following the close of Auction 73, AT&T and certain of its surrogates promoted the concept of

[1] *Promoting Interoperability in the 700 MHz Commercial Spectrum, Interoperability of Mobile User Equipment Across Paired Commercial Spectrum Blocks in the 700 MHz Band,* WT Docket No. 12-69, Notice of Proposed Rulemaking, FCC 12-31 (rel. Mar. 21, 2012) ("NPRM")

an LTE band – what would come to be known as Band 17 – that would be comprised of a subset of Band 12 and that would only contain Lower 700 MHz B and C blocks – the only Lower 700 MHz blocks in which AT&T held licenses.

The effect of this action has been to prevent A Block licensees from obtaining relevant LTE devices that operate on Band 12 even though the largest two operators – AT&T and Verizon – have already brought other 700 MHz LTE devices to market. Additionally, the balkanization of the Lower 700 MHz spectrum will continue to hinder and delay A Block licensees' access to Band 12 LTE devices. But for the creation of Band 17, many A Block licensees would have deployed LTE networks on Band 12, and the benefits of 4G technology would be in the hands of consumers throughout rural and high-cost areas of America today.

The proponents of Band 17 offered various technical justifications for the creation of that subset band, but real-world testing has shown those justifications were simply a pretext for a band that serves as an anti-competitive tool to further entrench the wireless duopolists. It is necessary for the Commission to take action on behalf of consumers and competition and quickly implement rules that would require interoperability across the Lower 700 MHz paired spectrum through the use of a single LTE band.

I. THE COMMISSION HAS THE AUTHORITY TO REQUIRE 700 MHz INTEROPERABILITY

a. COMMISSION PRECEDENT

i. CELLULAR LICENSING RULES

This NPRM is not the first time the Commission has been faced with ameliorating the anticompetitive harms resulting from a lack of interoperability in a given spectrum band. When the Commission first licensed advanced wireless systems in the early 1980s, it faced a similar

issue. At that time, the Commission had decided to license two separate cellular systems in each market and had to address the issue of how to maintain a competitive market structure. In that case, the Commission chose to require that, in order to be authorized, all mobile stations must be capable of operating over the entire allocated band:

> With respect to mobile stations, all units must be capable of operating at least over the entire 40MHz of spectrum (i.e., 666 channels). This is necessary in order to insure full coverage in all markets and capability on a nationwide basis. *Cellular Communications Systems*, 86 FCC 2d, 469, 482 (1981).

The same obligation was expressly included in the Commission's rules (Section 22.902(e)).

The Commission also has a track record of prohibiting other restrictive arrangements that become obstacles to competitive access in the telecommunications market.

- In 2000, the Commission relied on its Title III authority to require roaming in order to encourage "the development of a seamless, nationwide 'network of networks.'"[2]
- In 2001, the Commission prohibited common carriers from entering into contracts with commercial multiple tenant environment ("MTE") owners that granted exclusive access for the provision of telecommunications services to tenants in the MTE.[3]
- In 2007, the Commission found that contractual agreements granting one multichannel video programming distributor exclusive access for the provision of video services to multiple dwelling units ("MDUs") and other real estate developments harm competition and broadband deployment and that any benefits are outweighed by the harms of such agreements.[4]

---

[2] *See, e.g., Automatic and Manual Roaming Obligations Pertaining to Commercial Mobile Radio Services*, Notice of Proposed Rulemaking, 15 FCC Rcd 21628, 21630 ¶ 5, 21634 ¶ 15 (2000) (imposing manual roaming obligations on most wireless providers); *see also Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers*, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd. 15817, 15828, ¶28 (2007) ("*2007 CMRS Roaming Order*") (imposing an automatic voice roaming obligation and finding that the Commission had authority to impose such requirements in the public interest pursuant to its licensing authority under Sections 303(r) and 309 of the Act); *Data Roaming Order* at ¶¶ 62-63.

[3] *Promotion of Competitive Networks in Local Telecommunications Markets*, First Report and Order and Further Notice of Proposed Rulemaking in WT Docket No. 99.217, Fifth Report and Order and Memorandum Opinion and Order in CC Docket No. 96-98, Fourth Report and Order and Memorandum Opinion and Order in CC Docket No. 88-57, 15 FCC Rcd. 22983 ¶¶ 160-164 (2000)

[4] *Exclusive Service Contracts for Provision of Video Services in Multiple Dwelling Units and Other Real Estate Developments*, Report and Order and Further Notice of Proposed Rulemaking, MB Docket No. 07-51, 22 FCC Rcd. 20235 (2007).

- Also in 2007, the Commission required open access on 700 MHz C block licensees in pursuit of a "balanced spectrum policy," recognizing that "it may be necessary to vary the regulation of spectrum use to achieve certain critical public interest objectives."[5]

In each of these cases, the Commission exercised its authority to prevent exclusive arrangements or unnecessary technical hurdles that result in limited consumer choice and competition, contrary to the goals of the 1996 Act.

ii. CONSOLIDATION HAS RETURNED ENORMOUS POWER TO THE WIRELESS DESCENDANTS OF THE BELLS

In the years following the PCS auction, there was significant competition in the wireless industry as rural, regional, and super regional operators acquired newly-available spectrum and began to roll out new networks. The multiplicity of similarly-sized competitors and the mix of spectrum holdings combined to ensure that no single operator or pair of operators could dominate the market in the way that concerned the Reagan FCC in the 1980s.

Over time, however, the wireless affiliates of the original RBOCs successfully pursued a strategy of acquisitions and consolidation that has led to today's industry structure wherein two RBOC descendents function as a de facto industry duopoly controlling approximately 70% of all subscribers and 80% of wireless industry EBITDA (earnings before interest, taxes, depreciation and amortization).[6] When viewed in terms of interoperability, today's industry conditions are exactly like those the FCC sought to guard against in the 1980s. As was the case 30 years ago, the industry has returned to a state where dominant, entrenched operators have the market power to prevent competitors from acquiring necessary inputs for their businesses. For 700 MHz, this has meant fragmentation of the 700 MHz into bands that benefit the duopolists while at the same

[5] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, WT Docket No. 06-150, Second Report and Order, FCC 07-132, ¶ 202 (Aug. 10, 2007) ("*700 MHz Order*").
[6] *See, Staff Analysis and Findings*, WT Docket No. 11-65 at ¶ 37 (November 29, 2011)

time preventing necessary scale from forming for an ecosystem that would allow other operators to launch competing LTE networks.

iii. USE FCC PRECEDENT NOW THAT MARKET CONDITIONS REFLECT THE EARLY DAYS OF WIRELESS

The 700 MHz spectrum has been fragmented into distinct bands and the two largest holders of 700 MHz spectrum - AT&T and Verizon - have deployed essentially proprietary LTE networks and devices that work only on their spectrum. Given the enormity of the economic scale of AT&T and Verizon, these two carriers are the de facto "market" for LTE devices and equipment that operate at 700 MHz. Outside of this "market," it is not economically feasible for other carriers to obtain relevant LTE devices to operate in non-AT&T or non-Verizon 700 MHz bands.

Even if it were economically feasible for carriers to obtain relevant LTE devices in non-AT&T and non-Verizon 700 MHz bands, roaming from a competing carrier's network to one of the Bells' networks would not be possible without interoperable devices. The "market" that is controlled by AT&T and Verizon is not developing these devices, and competitive carriers cannot develop viable devices separately. Given the failure of the market to foster interoperable LTE deployment, only an interoperability requirement – like that imposed in 1981 by the Reagan FCC – can solve this problem.

iv. THERE WILL NOT BE AN INDUSTRY-DRIVEN SOLUTION

If the Lower 700 MHz marketplace were truly competitive, then regulatory action on this issue would likely not be necessary. But, that is not the case and the notion that an industry-driven solution to Lower 700 MHz device interoperability is achievable after nearly 4 years of public debate should be commended for its optimism, alone. After AT&T's creation of this

problem and years of AT&T's refusals to address this festering issue despite clear competitive harms, this much is clear: unless AT&T now discovers Lower 700 MHz device interoperability to be in its own best competitive interests, then this rule-making proceeding will be necessary to end the harms resulting from AT&T's abuse of its monopsony power in the Lower 700 MHz spectrum. In short, the absence of competitive balance among 700 MHz licensees blocks competitive carriers' efforts to achieve interoperability through industry consensus.

Instead of cooperative efforts toward a solution, the public record is replete with AT&T's apparently reflexive efforts to use its enormous scale to thwart the public interest benefits of interoperability in the Lower 700 MHz band.[7] Because Verizon does not plan to deploy on its Lower A Block and B Block licenses,[8] AT&T has monopsony power over the market for Lower 700 MHz devices. With AT&T's opposition to interoperability and Verizon's post-auction disinterest in Lower 700 MHz spectrum, no other Lower 700 MHz licensee (or group of licensees) has sufficient economic leverage to elicit the solution that the *NPRM* recognizes is necessary: "a unified band class across the Lower 700 MHz band[, which] has the potential to yield significant benefits for all licensees."[9] In short, the Lower 700 MHz device market is in a state of market failure and regulatory intervention is necessary.

b. COMMUNICATIONS ACT

Wireless carriers are subject to Sections 201 and 202 of the Communications Act. Section 201(b) prohibits unjust or unreasonable practices for or in connection with

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[7] *See, e.g.,* Ex parte presentation of AT&T Services, Inc., RM-11592 (filed July 29, 2011); Ex parte presentation of AT&T Services, Inc., RM-11592 (filed February 17, 2011); Ex parte presentation of AT&T Services, Inc. RM-11592 (filed November 2, 2010).

[8] *See,* "Verizon Wireless to Conduct Spectrum License Sale", Verizon Press Release, April 18, 2012 (http://www22.verizon.com/investor/news_verizon_wireless_to_conduct_spectrum_license_sale_04182012.htm)

[9] *NPRM* ¶ 4.

communication service and declares that any practice that is unjust or unreasonable is unlawful. 47 U.S.C. § 201(b). Similarly, Section 202(a) of the Act, 47 U.S.C. § 202(b), provides:

> It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in the charges, practices, classifications, regulations, facilities, or services for or in connection with like communication service, directly or indirectly, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person, class of persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage.

The actions that AT&T and others have taken to cause a lack of interoperability in the Lower 700MHz spectrum are unjustly discriminatory and anti-competitive. Without AT&T's actions in collaboration with its vendors, operators other than AT&T would have access to 700MHz equipment and relevant devices, and would be able to deploy 4G networks on the Lower 700MHz paired spectrum.

i. SECTIONS 301 & 303

Title III of the Communications Act, articulates Congress' intention that the Commission serve as the trustee of the taxpayers' radio spectrum. That is why Title III provides the Commission with clear authority to impose conditions on licensees to ensure interoperability.

First, section 301 of the Communications Act authorizes the Commission to regulate "radio communications" and "transmission of energy by radio."[10] Next, section 303(b) gives the Commission authority to "prescribe the nature of the service to be rendered by each class of licensed stations and each station within any class."[11] Then, section 303(r) authorizes the

[10] 47 U.S.C. § 301.
[11] *Id.* § 303(b).

Commission to "prescribe such restrictions and conditions, not inconsistent with law, as may be necessary to carry out the provisions of this Act."[12]

ii. SECTION 316

Even beyond these provisions, Title III expressly provides the Commission plenary authority over the granting of new spectrum licenses and the power to impose new conditions on previously licensed spectrum.[13] Pursuant to Section 316, "any station license … may be modified by the Commission … if in the judgment of the Commission such action will promote the public interest, convenience, and necessity, or the provisions of this chapter…"[14]

Thus, Congress has provided the Commission with certain authority to modify licenses and implement license restrictions. More specifically, the Commission may require licensees to operate in a manner that ensures interoperability as part of its authority to "prescribe the nature of service to be rendered by" licensees.[15] Applied here: the Commission is empowered to require any licensee of Lower 700 MHz spectrum to distribute or utilize only those devices that operate across the entire Lower 700 MHz spectrum.

c. AT&T AGREES THAT THE FCC HAS THE AUTHORITY TO ADDRESS THIS ISSUE

In April, Cellular South, Inc., Cellular South Licenses, Inc., and Corr Wireless Communications, LLC, filed an antitrust lawsuit against AT&T and others to end the anti-competitive harms that have resulted from AT&T's abuse of its monopsony control over the

[12] *Id.* § 303(r).
[13] *Id.* §§ 307, 309, 312, 316.
[14] *Id.* § 316(a).
[15] *Id.* § 303(b).

market for Lower 700 MHz equipment and devices.[16] AT&T, the leading opponent of Lower 700 MHz interoperability, has moved to dismiss that suit claiming, among other things, that the FCC alone should address the anticompetitive impact of the lack of interoperability in the Lower 700 MHz because "management of spectrum policy is a matter that falls particularly within the [FCC]'s discretion."[17] AT&T has therefore conceded that the FCC has authority to and should resolve this question.

II. THERE IS AMPLE EVIDENCE PROVING THAT INTEROPERABILITY IN THE 700 MHz BAND IS FEASIBLE

a. LOWER 700 MHz INTERPERABILITY HAS NO ADVERSE EFFECTS ON DEVICES

In the 32 months that this issue has been before the Commission[18], parties have presented ample evidence showing that there would be no adverse impact to device performance if the Commission implemented a Lower 700 MHz interoperability requirement that resulted in all Lower 700 MHz operators transitioning to Band 12.

i. 700 MHz WORKSHOP

As was made clear in the FCC's April 2011 Interoperability Workshop, there is no technical obstacle to Lower 700 MHz interoperability.[19] Even opponents of 700 MHz interoperability such as Verizon (represented by Executive Director of Network Strategy, William (Bill) H. Stone), admitted that interoperability is a question of what an operator is

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[16] *Corr Wireless Communications, LLC, et al v. AT&T, Inc,, et al*, Civil Action No. 3:12-cv-00036-DAS, (ND Miss., April 2, 2012) (the "Corr/AT&T Antitrust Litigation").
[17] AT&T Mobility, LLC's Memorandum of Law in Support of its Motion to Dismiss Corr/AT&T Antitrust Litigation at p. 31 (internal citations omitted).
[18] NPRM at p.2 n.2, p.6 ¶ 11
[19] *See, Lower 700 MHz Interoperability Workshop*, RM-11592, April 26, 2011(http://www.fcc.gov/events/700-mhz-interoperability-workshop)

willing to do economically, not what can be done technically.[20] And the use of an interoperable band for the Lower 700 MHz spectrum would impose a minimal additional cost for devices. The Commission already has before it information demonstrating that (1) device components are available to the market that would allow a transition to Band 12 and (2) that the device components required to enable utilization of a single band (Band 12) in the Lower 700 MHz total less than $1.00 and, in quantity, would have no impact on the wholesale cost of devices.[21] However, Commission action is required in order to ensure that Lower 700 MHz operators adopt the inclusive band and to ensure that there is not continuing discrimination against Band 12 in future technology developments.

ii. ATLANTA, GEORGIA & HERNDON, VIRGINIA TESTING

Cellular South (through C Spire Wireless), along with Cavalier Wireless, Continuum 700, King Street Wireless, MetroPCS, U.S. Cellular, and Vulcan Wireless (collectively, the "Lower A Block Licensees") have recently submitted a detailed technical report of field testing conducted in Atlanta, Georgia, and lab testing conducted in Herndon, Virginia, that conclusively demonstrates Channel 51 and Lower 700 MHz E Block broadcast transmissions do not pose an interference threat to Lower 700 MHz B and C Block operations.[22]

The summary of the Lower A Block Licensees May 25, 2012 filing which accompanied the detailed technical report stated:

> Channel 51 and Lower 700 MHz E Block broadcast transmissions do not pose an interference threat to Lower 700 MHz B and C Block device

[20] Id.
[21] *See, e.g.,* Ex parte presentation of Vulcan Wireless, LCC, RM-11592 and WT Dkt. No. 11-18, at enclosure p.9 (December 12, 2011) ("Components that are required to enable a unified band plan are all < $1 and, in quantity, have no cost impact.")
[22] *See* Notice of *Ex Parte* Presentation by Cavalier Wireless, LLC; C Spire Wireless; Continuum 700, LLC; King Street Wireless, L.P.; MetroPCS Communications, Inc.; U.S. Cellular; and Vulcan Wireless, WT Docket No. 12-69 (filed May 29, 2012).

reception. Field measurements in Atlanta documented the radiofrequency environment around Lower E Block towers, Channel 51 broadcast stations, and commercial LTE base stations. Laboratory tests of commercial AT&T devices used test procedures which effectively removed the narrower Band Class 17 duplexer from consideration, quantifying the performance of the receiver itself. The test results are equally applicable to a Band Class 12 device employing the same receiver but using the wider Band Class 12 duplexer.

The testing also confirmed that commercial devices are designed to far exceed the minimum 3GPP2 performance criteria in order to ensure compliance with specifications and adequate operation in markets with neighboring LTE systems in place. Band Class 17 devices currently receive and manage interfering signal levels from within the Lower B, C, and Upper C Blocks that are similar in strength to the Lower E Block broadcast signals. Devices designed to tolerate these neighboring LTE base station signals are also capable of handling the Lower E Block signals measured in Atlanta. The narrower Band Class 17 duplexer is not needed; the receiver performance alone is sufficient to protect Lower 700 MHz device reception in the Lower B and C Blocks.

It is also important to distinguish device reception and performance issues affecting interoperability from base station reception and interference issues affecting deployment. Potential interference to Lower A Block base station reception from Channel 51 broadcast stations is a base station interference issue relevant only to Lower A Block deployment in some markets. Similarly, Lower E Block interference to Band Class 12 base station reception may require additional protection or conditions akin to those imposed by the FCC on AT&T's Lower D and E Block licenses. These interference concerns are specific to base station deployment only, and are not in any way related to the topic of Lower 700 MHz device interoperability. Lower A Block system deployment would certainly be aided by conditions imposed on Channel 51 and the Lower E Block, but such conditions do not impact Lower B and C Block device performance and are not an interoperability prerequisite.

In summary, Band Class 12 devices that comply with 3GPP performance specifications would exhibit normal performance in a commercial system deployment using the Lower B and C Blocks. The use of Band Class 12 devices by AT&T to serve customers in their Lower B and C Blocks would pose no threat to their customer experience. Therefore, interoperability between Lower 700 MHz A, B, and C Blocks is technically feasible.[23]

[23] Id.

The results of this testing demonstrate conclusively that there are no interference concerns which would require AT&T (or any other Lower 700 MHz B block or C block licensee) to utilize Band 17 devices rather than Band 12 devices. Therefore, there is no technical justification for the anti-competitive harms resulting in AT&T's continued use of Band 17 devices in it Lower 700 MHz deployment.

b. ADJACENT CHANNEL INTERFERENCE IS STRICTLY A DEPLOYMENT CONSIDERATION

Opponents of interoperability claim that there are interference issues with DTV Ch 51 or with the Lower 700 MHz E Block that must be considered when determining the feasibility of an interoperability requirement. What these parties fail to point out is that any potential interference issues are issues that, if real, would only affect base stations but that are easily resolved or mitigated with any reasonable deployment scenario. Any interference that might exist from DTV Ch 51 or the Lower 700 MHz E Block is interference that does not affect devices and that does not affect operators in the Lower 700 MHz B or C Blocks.

III. THE LACK OF INTEROPERABILITY IS DELAYING 700 MHz DEPLOYMENTS, PREVENTING COMPETITION AND HARMING CONSUMERS

a. LACK OF INTEROPERABILITY HAS DELAYED DEPLOYMENTS

i. CELLULAR SOUTH IN AUCTION 73

Cellular South (through its subsidiary Cellular South Licenses, LLC) participated in Auction 73 in 2008 with the intent to acquire licenses for a 700 MHz footprint that would overlay our existing footprint and provide for near-term expansion into markets adjacent to our

existing markets. At the conclusion of the auction, Cellular South was the provisionally winning bidder for a collection of Lower 700 MHz A Block licenses that accomplished this purpose.[24]

At the time of Auction 73, the LTE standard designated by 3GPP for the Lower 700 MHz spectrum consisted of a single band – Band 12 – that covered all three blocks of Lower 700 MHz paired spectrum. This spectrum grouping was entirely consistent with every other grouping of LTE spectrum by 3GPP in that all blocks of spectrum in a common spectrum band were grouped into a single, inclusive 3GPP Band.

1. INTERFERENCE DOES NOT PREVENT AN A BLOCK DEPLOYMENT

Cellular South was confident in its ability to design a network plan that would allow a full-scale deployment of an LTE network in the Lower 700 MHz A Block. Interference from DTV Ch 51 and the Lower 700 MHz E Block with the B and C Blocks was not a concern then nor is it now. The possibility of interference was then, and remains today, merely a deployment issue that affects the placement of cell sites in the design of an LTE network in the Lower 700 MHz A Block.

a. CHANNEL 51 & LOWER E BLOCK OPERATORS ARE DEPLOYMENT CONSIDERATIONS ONLY

The potential interference from DTV Ch 51 or high-power E Block transmissions (which do not exist today and may never exist) is a consideration that may affect tower location and antennae direction. With respect to Ch 51, testing has shown that broadcasters using this channel prefer deployments that incorporate the use of high towers with antennae directed at the

[24] Cellular South was also the provisionally winning bidder for several Lower 700 MHz B Block licenses located within the footprint of the A Block licenses.

horizon.[25] This means that in the area where the Ch 51 tower has the greatest transmitting power, the signal is directed above the towers in a standard cellular deployment. As distance from the Ch 51 tower increases, the radiated power decreases and the signals emitted from cellular towers become the strongest signal in the area. In effect, the strongest Ch 51 transmissions "overshoot" weaker signals from cellular towers deployed in the vicinity of the Ch 51 tower and pose little threat to the cellular deployment in the adjacent spectrum. As the Ch 51 signal is projected further from the source, the power decreases and the cellular deployment offers the strongest signal in an area. As additional protection, an A Block operator can direct its antennae away from the Ch 51 broadcaster to further reduce deployment-related interference.

b. CELLULAR SOUTH WAS CONFIDENT THAT CHANNEL 51 & E BLOCK WOULD NOT PREVENT AN LTE DEPLOYMENT

While Cellular South was satisfied that a proper network plan would mitigate potential DTV Ch 51 interference, we also determined that it may be in our best interest to simply relocate Channel 51 broadcasters in some instances. Of the three DTV broadcasters located within Cellular South's 700 MHz A Block footprint, we successfully relocated two of those broadcasters.

With respect to the potential for Lower 700 MHz E Block transmissions, there are no current transmissions in the E Block so the potential for interference remains speculative. Cellular South notes that plans for a high-power, one-way transmission in the adjacent D Block were abandoned by the previous licensee of the D Block,[26] and those licenses have been

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[25] *See, e.g.,* Notice of *Ex Parte* Presentation by Cavalier Wireless, LLC; C Spire Wireless; Continuum 700, LLC; King Street Wireless, L.P.; MetroPCS Communications, Inc.; U.S. Cellular; and Vulcan Wireless, WT Docket No. 12-69, at § 5.2 (filed May 29, 2012).

[26] *See*, "Qualcomm Ends Mobile TV Service", *IHS Market Research*, October 12, 2010 (http://www.isuppli.com/Media-Research/MarketWatch/Pages/Qualcomm-Ends-Mobile-TV-Service.aspx)

transferred to AT&T which is preparing to use those licenses for supplemental downlink transmissions in its LTE deployment.[27] Accordingly, it cannot be assumed that the Lower 700 MHz E Block will be used for high-power transmissions or that the theoretical interference issues associated with that block would ever materialize.

But even if E Block deployments were present, those deployments would not pose risks to Lower 700 MHz B and C Block devices that are any different from the risks currently presented by adjacent LTE base stations.[28] And commercial devices operating on the Lower B and C Blocks are already designed to perform without service deterioration in the presence of neighboring LTE base stations.[29] Therefore, there is no need for AT&T's utilization of Band 17 in order to ameliorate interference risks from an adjacent Lower 700 MHz E Block deployment.

c. CHANNEL 51 & E BLOCK DO NOT JUSTIFY NEW LTE BANDS

It is clear from real-world testing that the theoretical interference issues from Channel 51 and the E Block are either 1) a possible deployment consideration affecting tower placement for A Block operators – and only A Block operators – in the case of Channel 51, or 2) currently non-existent and well within the ability of an A Block operator to mitigate (should it ever exist) in the case of E Block transmissions.[30] The same testing reveals that there is no practical difference between Band 12 and Band 17 devices operating in the B or C Blocks, even with the greatest possible level of interference and completely impractical deployment scenarios.[31] Therefore, there is no technical justification for the creation or continued use of Band 17, and the harm to

[27] *See* 3GPP submissions RP-110710 and R4- 122810. *See also* R4-113648 and R4-113790.
[28] *See, e.g.,* Notice of *Ex Parte* Presentation by Cavalier Wireless, LLC; C Spire Wireless; Continuum 700, LLC; King Street Wireless, L.P.; MetroPCS Communications, Inc.; U.S. Cellular; and Vulcan Wireless, WT Docket No. 12-69, at § 5.2 (filed May 29, 2012). Id. at § 6.
[29] Id.
[30] Id.
[31] Id.

consumers and competition will continue as long as the Commission permits operators to continue distributing Band 17 devices and deploying Band 17 networks.

ii. FRAGMENTATION OF LOWER 700 MHz

What truly amplifies the injury to competition is the fragmentation of already-limited scale that would otherwise exist for Lower 700 MHz devices and development. The largest purchaser of Lower 700 MHz devices promoted the creation of Band 17 and is now selling Band 17 devices that are not interoperable across the Lower 700 MHz spectrum.[32]

The uniqueness of the 700 MHz band plan in the United States means that there are relatively few purchasers of devices designed to operate in the Lower 700 MHz spectrum. The combined scale of the Lower 700 MHz operators is minimal when taken in the context of all operators for whom various manufacturers develop and build components and devices. Accordingly, it is imperative that economies of scale in the Lower 700 MHz be preserved so that consumers have access to a full array of competitive devices with the capability to access all Lower 700 MHz networks.

Unfortunately, a single B and C Block licensee has monopsony power over Lower 700 MHz devices and the resulting ability to determine whether Lower 700 MHz devices operate in the A Block or not. Virtually all of the scale in the Lower 700 MHz device purchasing market rests in the hands of AT&T who has chosen to orphan the A Block unnecessarily in order to fragment the combined scale of the Lower 700 MHz licensees and assure itself of a significant time to market advantage. Because of its overwhelming size, and its role as the largest purchaser of devices designed to operate in the Lower 700 MHz spectrum, device manufacturers will comply with AT&T's instructions to provide devices that will operate strictly within Band 17, as

[32] NPRM at p.13 ¶ 23.

opposed to devices that will operate across all of Band 12. As a result, devices that operate across all of Band 12 have been delayed in availability and delayed even further in development.

iii. UNSUCCESSFUL ATTEMPTS TO ACQUIRE DEVICES

Cellular South has attempted to acquire devices and equipment to allow an LTE buildout on its 700 MHz licenses. While it is possible to acquire network equipment that spans the entire Lower 700 MHz band, the fragmentation of Lower 700 MHz spectrum in Bands 12 and 17 has resulted in delayed development for Band 12 devices and components which subsequently resulted in a few uncompetitive devices whose features and performance lag well behind the Band 17 (and Band 13) devices available to the largest 700 MHz LTE operators.

b. LACK OF INTEROPERABILITY PREVENTS COMPETITION

Interoperability is fundamental to customers' ability to roam on other carriers' LTE networks. Until the deployment of LTE, each device sold for use on either a CDMA or GSM network has been built to operate across the entire range of Cellular spectrum, PCS spectrum and/or AWS spectrum. All devices did not necessarily include access to all spectrum bands, but all devices built to operate in any specific part of a given spectrum band were technologically capable of operating across all paired spectrum within that band. The only difference between devices was the air interface technology (i.e. CDMA or GSM). In other words, all devices were developed to be interoperable across the entirety of a given block of spectrum (e.g., all Cellular devices are interoperable across the Cellular spectrum, all PCS devices are interoperable across the PCS spectrum, and all AWS devices are interoperable across the AWS spectrum). This is not true for the LTE networks being deployed on the 700 MHz spectrum even though they use LTE as a common air interface technology.

The creation of Band 17 also essentially eliminated smaller carriers' access to roaming on a Lower 700 MHz national network. Because devices are not interoperable across the full 700 MHz spectrum and because AT&T is the only carrier that can be expected to operate a nationwide LTE network using Lower 700 MHz spectrum, operators who intend to deploy LTE networks on Lower 700 MHz spectrum have only one potential roaming partner for nationwide Lower 700 MHz roaming: AT&T. But by using the non-inclusive Band 17, AT&T virtually assures itself that it will not be required to provide roaming to customers who chose to subscribe to the service of Band 12 operators.

This means that the Commission's 2011 data roaming Order (which is currently being challenged by Verizon in the Court of Appeals for the DC Circuit[33]) is rendered useless for consumers who use Band 12 devices so long as a non-interoperable LTE band is permitted to be deployed in the Lower 700 MHz spectrum. The effect is simple and startling. The existence of Band 17 has the effect of denying any carrier using Band 12 access to nationwide roaming on the Lower 700 MHz spectrum. That is a denial of a key input necessary for effective competition.

IV. THE COMMISSION SHOULD ACT NOW TO STOP THE ONGOING HARM TO LOWER A BLOCK LICENSEES AND THEIR CUSTOMERS

a. THIS MATTER HAS BEEN PENDING BEFORE THE COMMISSION FOR NEARLY THREE YEARS AND MEANINGFUL RELIEF APPEARS YEARS AWAY

The 700 MHz Block A Good Faith Purchasers Alliance filed its Petition more than 32 months ago, on September 29, 2009.[34] The Commission did not issue its Public Notice inviting comment on the Petition until almost five months later, on February 18, 2010.[35]

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[33] *See, Cellco Partnership d/b/a Verizon Wireless v. FCC*, USCA Case Nos. 11-1135 & 11-1136 (D.C. Cir.).
[34] NPRM at p.2 n.2, p.6 ¶ 11
[35] NPRM at p.6 ¶ 11 and n.26

The Commission took no further action on the Petition for more than a year after inviting comment in February 2010. On April 26, 2011 – more than 18 months after the filing of the Petition – the Commission held an "Interoperability Workshop" through which the agency sought "to update the record and gather additional information . . . on the status and availability of interoperable [devices] in the 700 MHz band."[36]

Yet another eleven months passed before the Commission issued its *Notice of Proposed Rulemaking* ("NPRM") on March 21, 2012 – 30 months after the Petition was filed.[37]

The NPRM does not provide any indication of when the Commission might adopt interoperability rules. Although one Commissioner has expressed hope that a rulemaking or other solution might be accomplished by the end of 2012,[38] at least one opponent of interoperability has stated that a more likely estimate would be at least one year from the date of the NPRM – or no sooner than March 21, 2013.[39] Given that the Commission has suggested it may accept as much as a two-year transition period,[40] it is conceivable that Band 12 carriers would get no meaningful relief from any Commission rulemaking before March of 2015 – far too long for A Block licensees to continue to be deprived of the ability to provide truly competitive LTE service.

b. FURTHER DELAY WILL CAUSE EVEN MORE HARM

Lack of interoperability (and the resulting delay in Band 12 development) has prevented Cellular South and most A Block licensees from obtaining any relevant LTE devices (such as

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[36] NPRM at p.9 ¶ 14
[37] NPRM at p. 1, p. 2 n.2.
[38] *See* NPRM at p.39, Statement of Commissioner Mignon L. Clyburn ("I look forward to an industry solution, or the adoption of rules, by the end of this calendar year."). Commissioner Clyburn also observed that the Commission first initiated the proceeding to adopt service rules for the 700 MHz band in 2006, and that "the industry has already had more than four years to find a solution" to the lack of interoperability in the 700 MHz band.
[39] Comments of AT&T, *In the Matter of 700 MHz Band Mobile Equipment Design and Procurement Practices*, RM No. 11592, at p. 13
[40] NPRM at p.24 ¶ 50.

cell phones, smartphones, and tablet computers) that operate on Band 12 frequencies – even though AT&T and Verizon have already brought other 700 MHz LTE devices to market. Such devices are a prerequisite to deploying a LTE network on the Band 12 spectrum licensed to Cellular South and others. Additionally, actions taken by AT&T and others will continue to hinder and delay Band 12 licensees' access to LTE devices that operate on the A Block and, in many cases, will continue to prevent Cellular South and its customers from having access to other LTE devices.

There are very few commercially available Band 12 LTE devices as a result of the fragmentation of the Lower 700 MHz spectrum. And these few Band 12 LTE devices are not sufficient to remedy the harm. The LTE devices available for Band 12 lack the development that distinguish the more mature, more sophisticated portfolio of Band 13 and Band 17 devices. Moreover, a few Band 12 devices, delayed for months or years after the introduction and refinement of multiple Band 13 and Band 17 devices, will not be adequate to support the commercial deployment of a LTE network on Band 12. It is also important to note the existence of a LTE Band 12 device, without more, offers no assurance that such a device could be used for roaming on any other carrier's non-Band-12 national network.

The lack of interoperability will be a source of continuing harm to efforts to deploy Band 12 networks since any such deployment will be hindered by the systemic impediment which Band 17 places on development of future Band 12 LTE devices and networks. As recent history has demonstrated time and again, even the "hot device" of today becomes outdated in a very short period of time. So long as Band 17 exists separately from Band 12, device manufacturers will focus their Lower 700 MHz efforts primarily if not exclusively on developing Band 17 devices for use by AT&T. Virtually every incremental refinement and technological solution for

Band 12 will be delayed so long as the use of Band 17 encourages chip and device manufacturers to direct all of their Lower 700 MHz research and development efforts to the advancement of that band. In sum, Band 12 will not obtain technological parity with its subset Band 17 as long as Band 17 exists separately, thus placing carriers intending to operate in Band 12 at a severe competitive disadvantage. The inability of A Block licensees to deploy on Band 12 while the largest carriers vigorously deploy and market LTE service on Bands 13 and 17 will have lasting anticompetitive effects.

c. PROMPT ACTION BY THE COMMISSION WILL MITIGATE COSTS

Opponents of 700 MHz interoperability will argue that an interoperability requirement will result in added costs. However, these costs can be mitigated by a clear signal from the Commission that it intends to mandate interoperability without delay. Prompt action by the Commission in this rulemaking proceeding will provide a warning to any operator choosing to deploy non-interoperable Lower 700 MHz devices and equipment.

Moreover, there is nothing inequitable about requiring the parties that created the interoperability problem to bear their own costs for complying with the solution to the problem. Had Band 17 never been carved out of Band 12, there would be Lower 700 MHz interoperability today.

CONCLUSION

There was never any technical justification for carving Lower 700 MHz Blocks B and C out of the existing Band 12 and creating a new Band 17 in 2008. Real-world testing has confirmed this fact. By creating Band 17, AT&T has prevented broad deployment of LTE networks by most A Block licensees and shielded itself from competition while its own deployment has lagged. In turn, this has prevented LTE technology from reaching the hands of

consumers across the country, many in areas served by rural and regional providers that would otherwise have the ability to deliver LTE today.

The Commission has been aware of the interoperability problem for 32 months and action is overdue. It is time now to require that Lower 700 MHz licensees begin an immediate transition to a single, interoperable LTE band for operations in the Lower 700 MHz A, B and C Blocks.

Respectfully submitted,

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The FCC Must Stop the Spread of Non-Interoperability in the U.S. Mobile Market

By
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June 3rd 2013

Non-interoperability of mobile devices, i.e., in its ultimate form their exclusive connectivity to only one operator's network, is moving rapidly and inexorably along a path to become an exceptional[1] and widespread feature of the mobile broadband market in the U.S. If this outcome is allowed to happen it will violate the principle embedded in the U.S. telecommunications environment since the Communications Act of 1934 that customers should be able to connect any device to any network, universally and ubiquitously, subject ONLY to limitations specifically designed to avoid harm to the network or to other users. Non-interoperability, currently beiing promoted and deployed by AT&T and Verizon Wireless rolls back time to before the FCC's Carterfone decision in 1968 that confirmed and reinforced the right of customers to attach any compatible device to any network. This right supports two indispensable values:

1. *Creativity* in terms of the devices and the applications and services available to customers through the use of innovative network connected devices developed by multiple entrepreneurs not controlled by the network operators themselves; and

2. *Sharing* as result of customers' guaranteed freedom to share information and ideas freely with other customers, and third parties, independently of the networks they are connected to and the devices they are using.

Currently, interoperability is under attack from the two major mobile (and fixed) operators in the U.S., beginning with their exploitation of non-interoperable LTE-based wireless networks in the 700 MHz Band (Band classes 17 and 13 respectively). We will not relate here the history and events behind the introduction of this non-interoperability. They have already been amply exposed in the course of this Docket. They have led to an estimated 30 million or so non-interoperable (predominantly iOS- and Android-based) devices in service as of end-2012.

At this point, absent prompt and decisive action by the Commission, it is clear that non-interoperability is on the verge of becoming a permanent, inescapable, widespread and exceptional characteristic of the U.S. wireless market over the next few years to the detriment of the interests of customers, the effectiveness of market competition, and the stimulation of innovation by new companies. Non-interoperability has, and will have, increasingly adverse consequences for the prices customers are

[1] Unique to the U.S. among major markets (Canada and the Caribbean are being dragged into a comparable situation by their proximity to, and dependence on, U.S. spectrum allocations).

charged, the eventual economies of scale and timeliness of device development and supply for the U.S. market, and national and international roaming arrangements.

The trend toward non-interoperability is embedded in and being pushed by the mid- and long-term plans of Verizon and AT&T. In this brief Comment we will refer specifically to Verizon's initiatives. Verizon's steps to expanding the scope and impact of non-interoperability include its announced intention to offer LTE-only devices[2] and to exploit carrier aggregation in future LTE investments as specified in LTE-Advanced[3]. Carrier aggregation, for example between Band Class 13 (or 17 in the case of AT&T), and the AWS band, will extend the effects of non-interoperability into the latter band which is itself interoperable. Multiple operators in the Americas, including the U.S., have deployed and will deploy LTE in the AWS band, creating a healthy environment for competition and roaming possibilities. But none[4] will offer carrier aggregation with Band Class 17 or 13 and its accompanying increases in performance, such as the average and peak speeds customers will enjoy.

For their part, LTE-only devices will not even offer the fall-back compatibility that multi-mode devices, e.g., LTE/HSPA designed for AT&T's networks or LTE/CDMA designed for Verizon's networks, can provide to customers who may be attracted to a device because of its special features, and are willing to use it with a competing operator even if its full communications capabilities are not then available.[5]

Both AT&T and Verizon are championing versions of carrier aggregation in the global LTE standards body 3GPP that apply only to them, i.e., are not even U.S- but single carrier-specific[6], since they include their respective Band Classes 17 and 13. These efforts represent a continuation of the spirit of AT&T's original initiative to use this global standards body to introduce a standard (Band Class 17) that only applied to the U.S., without involving other key U.S. stakeholders, including the Commission itself at that time (2008).

Through their pursuit and planned expansion of non-interoperability, the two major U.S. mobile operators are mounting a concerted attack on one of the most precious and fundamental values and

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[2] "Verizon hints at LTE-only phones in 2014 to lower subsidies," http://news.cnet.com/8301-1035_3-57572505-94/verizon-hints-at-lte-only-phones-in-2014-to-lower-subsidies/

[3] Mike Haberman, Vice President Network Engineering, Verizon Wireless, "...in 2014 the carrier will use carrier aggregation technology to combine data transmissions over its AWS and 700 MHz spectrum to improve speeds and capacity," http://www.fiercewireless.com/story/verizon-almost-50-data-traffic-now-goes-over-lte-network/2013-01-09?utm_campaign=TwitterEditor-FierceWireless

[4] There may be minor exceptions in Canada depending on the outcome of its 700 MHz auction which as of this writing is unclear – this auction has just been postponed from November 2013 until January 2014

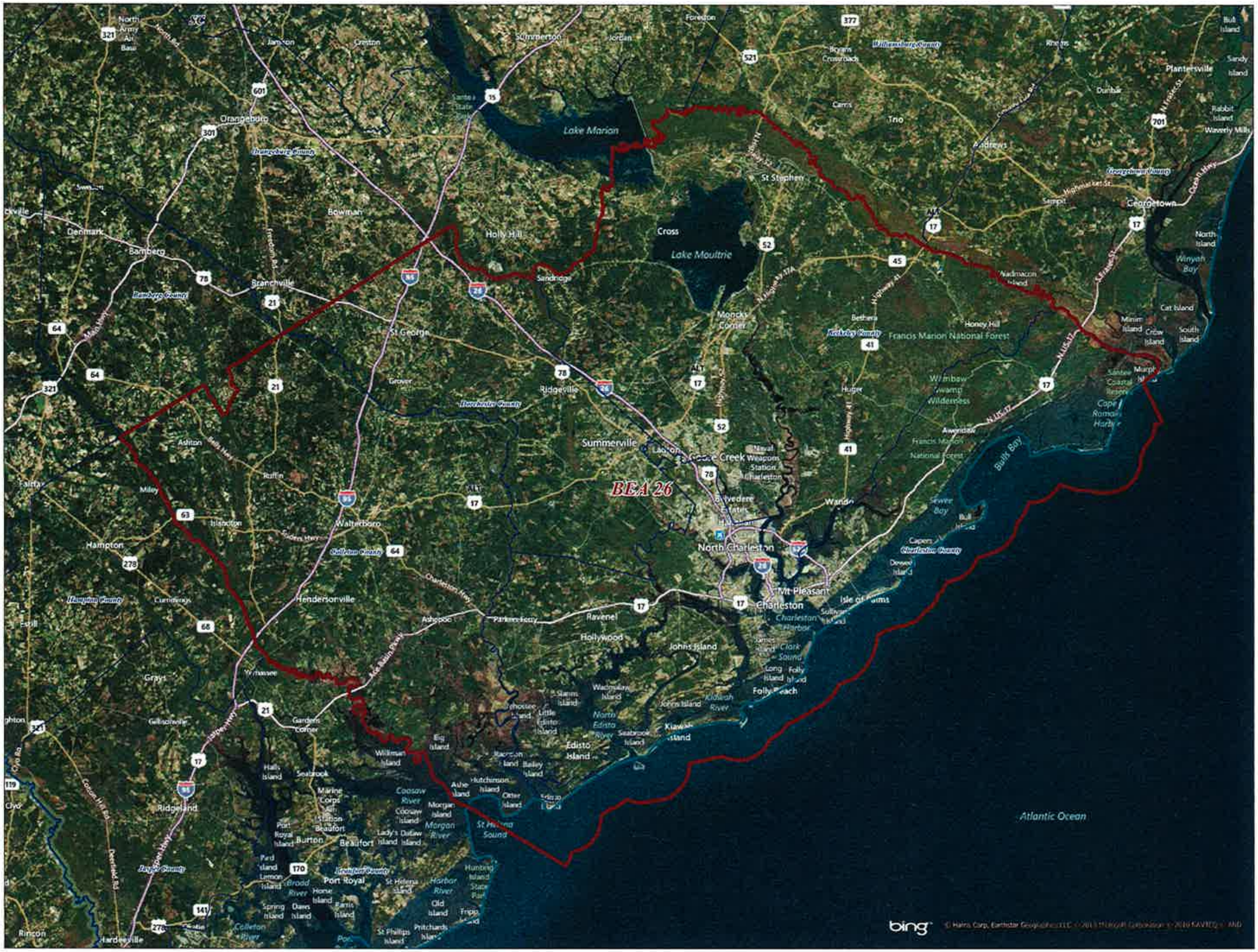
[5] For example T-Mobile reported that there were 1.7 million unlocked iPhones on its network before it offered iPhones itself even though T-Mobile did not offer HSPA services on the same frequencies as AT&T so its customers could only exploit its Wi-Fi hot spots or slow 2G data services - "T-Mobile could get iPhone in 2013," http://www.bizjournals.com/atlanta/blog/atlantech/2012/12/t-mobile-could-get-iphone-in-2013.html

[6] They may also eventually include much smaller operators then either of them in Canada and the Caribbean depending on the outcomes of spectrum awards in the 700 MHz band in these countries; Latin America is following the Asian 700 MHz band plan, not the U.S. plan.

principles that have guided and sustained the growth and development of U.S. telecommunications for the benefit of consumers, businesses and other users of network services and the U.S. economy since the days of voice-dominated communications to today's era of the broadband Internet.

Only the Commission can reverse this momentum toward an increasingly non-competitive market environment in which the freedom of choice of customers and the ability of innovators to bring new devices, applications and services to commercial reality, will become subject to the unchallengeable vetoes and decisions of the largest U.S. operators.

Market Map for BEA026
Charleston – North Charleston, South Carolina


BEA 26
Atlantic Ocean
Charleston
North Charleston
Mt Pleasant
Summerville
Goose Creek
Moncks Corner
Lake Moultrie
Lake Marion
Georgetown
Orangeburg
Walterboro
Beaufort
Port Royal
Ridgeland
Hampton
St George
Ridgeville
Holly Hill
St Stephen
Francis Marion National Forest
Bulls Bay
Winyah Bay
Johns Island
Kiawah Island
Edisto Island
Folly Beach
Isle of Palms
Hollywood
Ravenel
Hendersonville
Bamberg
Branchville
Denmark
Bowman
Andrews
Trio
Plantersville
Dorchester County
Berkeley County
Charleston County
Colleton County
Georgetown County
Orangeburg County
Bamberg County
Hampton County
Jasper County
Beaufort County
Williamsburg County
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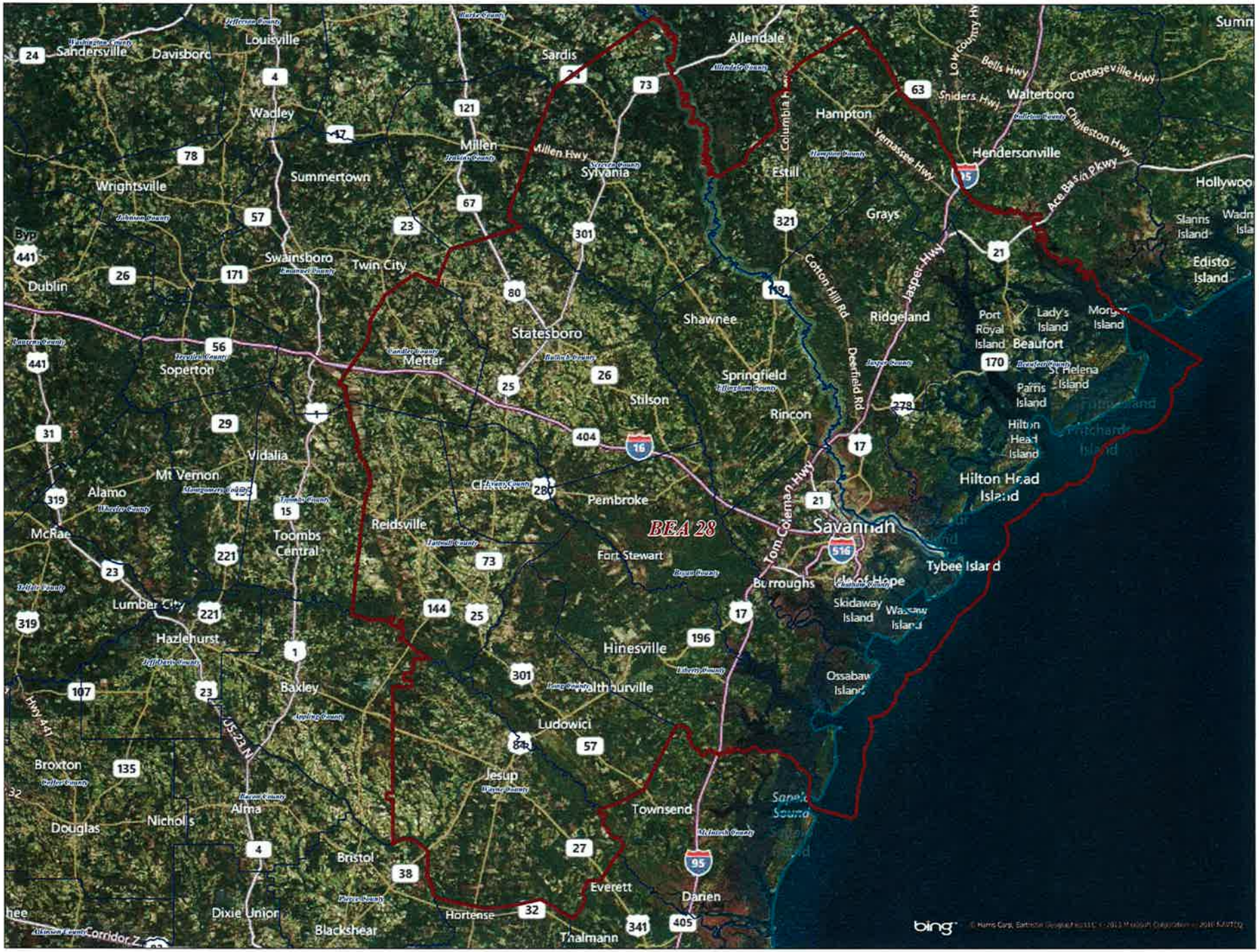
Market Map for BEA028
Savannah – GA, SC


BEA 28
Sandersville
Davisboro
Louisville
Sardis
Allendale
Wadley
Millen
Summertown
Sylvania
Hampton
Walterboro
Hendersonville
Estill
Wrightsville
Grays
Swainsboro
Twin City
Dublin
Statesboro
Shawnee
Ridgeland
Port Royal Island
Beaufort
Lady's Island
Edisto Island
Soperton
Metter
Springfield
Stilson
Rincon
Hilton Head Island
Vidalia
Mt Vernon
Alamo
Pembroke
Savannah
Reidsville
Toombs Central
McRae
Fort Stewart
Tybee Island
Burroughs
Lumber City
Hazlehurst
Hinesville
Skidaway Island
Baxley
Walthourville
Ludowici
Broxton
Jesup
Townsend
Douglas
Nicholls
Alma
Bristol
Everett
Darien
Dixie Union
Hortense
Blackshear
Thalmann
Corridor Z
Tom Coleman Hwy
Jasper Hwy
Cotton Hill Rd
Deerfield Rd
Millen Hwy
Yemassee Hwy
Sniders Hwy
Bells Hwy
Cottageville Hwy
Charleston Hwy
Ace Basin Pkwy
Hwy 441
US-23 N
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